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CONTENTS

A Check-List of Fishes Recorded from Fijian Waters

By Gilbert P. Whitley, of the Australian Museum, Sydney

A Check-List of the Fishes of New Zealand

By W. J. Phillipps, F. L. S.,
Dominion Museum, Wellington, New Zealand

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PAN-PACIFIC UNION

At the Pan-Pacific Research Institution

The Pan-Pacific Research Institution, an outgrowth of the First Pan-Pacific Food Conservation Conference, is developing into an organization of actual and active research workers interested in the economic problems of food, transportation, and population throughout the Pacific area.

For the local work and service in Honolulu, spacious grounds and buildings have been set aside by the Pan-Pacific Union (through the generosity of the Castle family). These buildings in Manoa Valley can conveniently house some forty visiting scientists, and it is proposed that research workers from every part of the Pacific will be invited to make their home here while pursuing research work in Hawaii.

The Union has entertained at the Institution a number of distinguished scientists from Australia, New Zealand, Canada, the United States, China, Korea, and Japan. Small Pan-Pacific conferences of leading men in many lines of thought and action it is hoped will gather at the Institution in Honolulu as guests of the Union. Here they may live, work, and plan together. Here the First Pan-Pacific Fisheries Conference was held with Dr. David Starr Jordan as chairman and resident at the Institution for some months, in close conference with ichthyologists from every part of the Pacific. Out of this conference has grown a work undertaken by the Institution of publishing in its Journal check lists of the fish of every Pacific country, these to be bound together finally in a single volume containing a check list of the fish of the Pacific.

Councils of the Pan-Pacific Research Institution are at work on check lists in the several Pacific lands and islands of the indigenous trees and plants as well as of their natural enemies and the parasites that destroy these injurious insects, these check lists to be published from time to time in the Journal of the Institution.

The cooperation of scientists engaged in research work in any part of the Pacific is solicited, and a cordial invitation is extended to those attacking the problems of food production and distribution to visit the Institution buildings in Honolulu as guests.

It is hoped that cooperating councils of the Institution may be established in each and every Pacific land. Those already appointed in Hawaii are:

Aquatic Resources Council, Dr. David Starr Jordan, chairman.

Plant Constituent Council, Dr. Nils P. Larsen, chairman.

Crop Development Council, Prof. F. G. Krauss, chairman.

Race and Population Study Council, Kilmer O. Moe, chairman.

Health and Sanitation Council, Dr. C. B. Cooper, chairman.

Pan-Pacific Botanic Garden Council, Willis T. Pope, chairman.

Animal Husbandry Council, Prof. L. A. Henke, chairman.

Meteorological and Topographical Council, E. A. Beals, chairman.

Legislative Council, Col. F. M. Brown, chairman.

Entomological Council, Prof. J. F. Illingworth, chairman.

A limited number of students are accepted at the Institution, a building on the grounds being set aside for their occupancy, the Union financing their tuition, they giving certain hours as helpers at the Institution.

The first number of the Journal contained a "Check-list of the Fish of Hawaii" by Dr. David Starr Jordan and Dr. Barton Warren Evermann; the second, a list of the "Institutes for Research Work in the Interest of Agriculture in the Netherlands Indies," by Dr. P. J. S. Cramer; the third number a list of "Institutions for Research Work in the Territory of Hawaii." The present number contains a "Check-List of the Fish of Fiji," by Gilbert P. Whitley of the Australian Museum, Sydney, and a similar list of the fish of New Zealand prepared by W. J. Phillipps, F. L. S., Dominion Museum, Wellington.

A Check List of Fishes Recorded from Fijian Waters.

By GILBERT P. WHITLEY
Australian Museum, Sydney.*

THE fish-fauna of Fiji as a whole appears to have escaped treatment by ichthyologists. Species were described, a few at a time, in scattered publications for many years but no attempt at a list of the fishes of the group was made until 1906, when Jordan and Seale's Provisional Check-List of the Fishes of Oceania (Bull. U. S. Fish. Bur., vol. xxv) was published. Owing largely to collections made by H.M.S. "Challenger" and the U.S.S. "Albatross," many species have been recorded since the appearance of that monumental work.

This list is not presumed to be complete, since any collector could doubtless procure many unrecorded species during a stay in Fiji; it is merely presented as a help towards future work on the principle that a bundle of faggots is better than a number of loose sticks. Species doubtfully or wrongly recorded from Fiji are not listed. Sufficient data are not available to enable inclusion of the bathymetrical distribution, commercial value, or vernacular names of the species, but Jordan and Evermann's Check-List of the Fishes of Hawaii (1926) will be found useful in these respects. I have followed fairly closely the plan of that paper in this contribution, believing that such uniformity will prove more helpful to Pan-Pacific workers.

The card-index to Australian ichthyological literature compiled by my late friend and senior colleague, Mr. Allan R. McCulloch, has been of great assistance to me in regard to references and nomenclature.

The principal literature consulted is as follows:

1859-70 Günther, Cat. Fish. Brit. Mus. i-viii.
1869 Schmeltz, Mus. Godeffroy Cat. iv, Pisces, pp. 12-29.
1874 Schmeltz, Mus. Godeffroy Cat. v, Pisces, pp. 21-41, 203-207.
1880 Günther, Rept. Voy. Challenger i. 6, pp. 33-36.
1884 Pöhl, Mus. Godeffroy Cat. ix, Pisces, pp. 25-46.
1903 Garman, Bull. Mus. Comp. Zool. xxxix. 8, pp. 229-240.
1906 Jordan and Seale, Bull. U. S. Bur. Fish, xxv, pp. 173-455.
1908 Jordan and Dickerson, Proc. U. S. Nat. Mus. xxxiv, pp. 603-617.
1909 Günther, Fische der Südsee viii, pp. 261-388.
1910 Günther, Fische der Südsee ix, pp. 389-515.
1911 Kendall & Goldsborough, Mem. Mus. Comp. Zool. xxvi, 7, pp. 241-344.
1911-22 Weber & de Beaufort, Fish. Indo-Austr. Archip. i-iv.
1915 Duncker, Mitteil. Natur. Mus. Hamb. xxxii, pp. 9-120.
1923 Fowler & Bean, Proc. U. S. Nat. Mus. lxiii, pp. 1-27.
1923 Dean, Bibliogr. Fishes iii, p. 456.
1925 Schmidt, Danske Vidensk. Selsk. Skrifter, naturv. math. (8) x. 4, pp. 329-382.
1926 Jordan & Evermann, Journ. Pan-Pacif. Res. Inst. i. 1, pp. 3-15.
1926 Whitley, Austr. Mus. Magazine ii. 10, pp. 353-356.

Family i. CARCHARHINIDAE.

1. Carcharhinus gangeticus Müller & Henle.
2. Carcharhinus insularum Snyder.
3. Carcharhinus melanopterus Quoy & Gaimard.

Family ii. SPHYRNIDAE.

4. Sphyrna zygaena Linnaeus.

Family iii. SQUALIDAE.

5. Isistius brasiliensis Quoy & Gaimard.

Family iv. ELOPIDAE.

6. Elops hawaiensis Regan.

Family v. MEGALOPIDAE.

7. Megalops cyprinoides Broussonet.

Family vi. CHANIDAE.

8. Chanos chanos Forskal.

Family vii. DUSSUMIERIIDAE.

9. Spratelloides gracilis Temminck & Schlegel.

Family viii. CLUPEIDAE.

10. Harengula punctata Rüppell.

* By permission of the Trustees of the Australian Museum.

11. Harengula (Wilkesina) fijiense Fowler & Bean.
12. Sardinella gibbosa Bleeker.
13. Sardinella fimbriata Cuvier & Valenciennes.
14. Sardinella melanura Cuvier.

Family ix. SYNODONTIDAE.

15. Trachinocephalus myops Forster.
16. Synodus varius Lacepède.
17. Saurida gracilis Quoy & Gaimard.

Family x. CHLOROPHTHALMIDAE.

18. Chlorophthalmus productus Günther.

Family xi. MYCTOPHIDAE.

19. Myctophum dumerilii Bleeker.

Family xii. PLOTOSIDAE.

20. Plotosus anguillaris Bloch.
21. Plotosus canius Hamilton-Buchanan.

Family xiii. ANGUILLIDAE.

22. Anguilla fidjiensis Günther.
23. Anguilla mauritiana Bennett.
24. Anguilla obscura Günther.
25. Anguilla australis Richardson.

Family xiv. CONGRIDAE.

26. Conger fijiensis Ogilby.
27. Conger guttulatus Günther.
28. Conger marginatus Valenciennes.
29. Conger multidens Castelnau.

Family xv. ECHELIDAE.

30. Muraenichthys gymnopterus Bleeker.
31. Myropterura laticaudata Ogilby.

Family xvi. MURAENESOCIDAE.

32. Muraenesox cinereus Forskal.

Family xvii. OPHICHTHYIDAE.

33. Bascanichthys pusillus Seale.
34. Ophichthys cephalozona Bleeker.
35. Ophichthys bicolor Kaup.
36. Achirophichthys typus Günther.
37. Pisoodonophis cancrivorus Richardson.
38. Chlevastes colubrinus Boddaert.
39. Leiuranus semicinctus Lay & Bennett.
40. Sphagebranchus macrodon Bleeker.
41. Sphagebranchus polyophthalmus Bleeker.

Family xviii. MORINGUIDAE.

42. Moringua macrocephala Bleeker.
43. Moringua microchir Bleeker.
44. Moringua abbreviata Bleeker.
45. Moringua bicolor Kaup.
46. Moringua javanica Kaup.
47. Moringua microchir Bleeker.
48. Moringua lumbricoidea Richardson.

Family xix. MURAENIDAE.

49. Gymnothorax ruppellii McClelland.
50. Gymnothorax (siderea) pictus Ahl.
51. Gymnothorax meleagris Shaw.
52. Gymnothorax thyrsoidea Richardson.
53. Gymnothorax polyuranodon Bleeker.
54. Gymnothorax favagineus Bloch & Schneider.
55. Gymnothorax stellatus Lacepède.
56. Gymnothorax richardsonii Bleeker.
57. Gymnothorax undulatus Lacepède.
58. Gymnothorax reticularis Bloch.
59. Gymnothorax halmaherensis Bleeker.
60. Uropterygius fijiensis Fowler & Bean.
61. Echidna nebulosa Ahl.
62. Echidna zebra Shaw.

Family xx. BELONIDAE.

63. Strongylura fijiense Fowler & Bean.
64. Tylosurus giganteus Temminck & Schlegel.
65. Belone platyura Bennett.

Family xxi. HEMIRHAMPHIDAE.

66. Hemirhamphus far Forskal.
67. Hemirhamphus dussumieri Cuvier & Valenciennes.
68. Hemirhamphus laticeps Günther.
69. Zenarchopterus dispar Cuvier & Valenciennes.
70. Zenarchopterus maculosus Garman.

Family xxii. EXOCOETIDAE.

71. Cypselurus naresii Günther.
72. Cypselurus ogilbyi Jordan & Snyder.
73. Cypselurus spilonotopterus Bleeker.

Family xxiii. CORYPHAENOIDIDAE.

74. Hymenocephalus longibarbus Günther.
75. Lionurus microlepis Günther.

Family xxiv. SOLEIDAE.

76. Soleichthys heterorhinos Bleeker.
77. Microbuglossus nigrostriolatus Kner & Steindachner.

Family xxv. BOTHIDAE.

78. Bothus pantherinus Rüppell.

Family xxvi. HOLOCENTRIDAE.

79. Myripristis hexagonus Lacepède.
80. Myripristis murdjan Forskal.
81. Holocentrus spinifer Forskal.
82. Holocentrus punctatissimus Cuvier & Valenciennes.
83. Holocentrus diadema Lacepède.
84. Holocentrus sammara Forskal.

Family xxvii. ANOMALOPSIDAE.

85. Anomalops palpebratus Boddaert.

Family xxviii. FISTULARIIDAE.

86. Fistularia petimba Lacepède.

Family xxix. SYNGNATHIDAE.

87. Choerichthys sculptus Günther.
88. Stigmatophora nigra Kaup.
89. Microphis brachyurus Bleeker.
90. Corythoichthys conspicillatus Jenyns.
91. Syngnathus semistriatus Kaup.
92. Doryrhamphus melanopleura Bleeker.
93. Ichthyocampus sp. Garman 1903.
94. Hippocampus foliatus Perry.

Family xxx. ATHERINIDAE.

95. Atherina brachyptera Bleeker.
96. Atherina eendrachtensis Quoy & Gaimard.
97. Hepsetia lacunosa Forskal.

Family xxxi. MUGILIDAE.

98. Mugil kandavensis Günther.
99. Liza vaigiensis Quoy & Gaimard.
100. Liza caeruleomaculata Lacepède.
101. Liza troscheli Bleeker.
102. Liza melinopterus Cuvier & Valenciennes.
103. Agonostomus loaloa MacDonald.

Family xxxii. SPHYRAENIDAE.

104. Sphyraena forsteri Cuvier & Valenciennes.
105. Sphyraena obtusata Cuvier & Valenciennes.

106. Sphyraena commersonii Cuvier & Valenciennes.
107. Sphyraena novae-hollandiae Günther.

Family xxxiii. POLYNEMIDAE.

108. Polynemus plebeius Broussonet.

Family xxxiv. SCOMBRIDAE.

109. Rastrelliger kanagurta Cuvier.
110. Rastrelliger loo Cuvier & Valenciennes.
111. Scomberomorus (Cybium) commerson Lacepède.

Family xxxv. CARANGIDAE.

112. Caranx parasitus Garman.
113. Caranx regularis Garman.
114. Caranx melampygus Cuvier & Valenciennes.
115. Caranx jordani Nichols.
116. Caranx speciosus Forskal.
117. Caranx forsteri Cuvier & Valenciennes.
118. Alectis indicus Rüppell.
119. Scomberoides sancti-petri Cuvier & Valenciennes.
120. Scomberoides toolooparah Rüppell.

Family xxxvi GERRIDAE.

121. Gerres oyena Forskal.
122. Gerres gigas Günther.
123. Gerres kapas Bleeker.

Family xxxvi(a) LEIOGNATHIDAE.

124. Leiognathus equula Bloch.
125. Leiognathus splendens Cuvier.
126. Leiognathus smithursti Ramsay & Ogilby.
127. Leiognathus (Aurigequula) fasciatus Lacepède.
128. Gazza minuta Bloch.

Family xxxvii. KUHLIIDAE.

129. Kuhlia rupestris Lacepède.
130. Kuhlia marginata Cuvier & Valenciennes.
131. Kuhlia malo Cuvier & Valenciennes.
132. Kuhlia munda De Vis.

Family xxxviii. APOGONIDAE.

133. Apogon hyalosoma Bleeker.
134. Apogon ceramensis Bleeker.
135. Apogon quadrifasciatus Cuvier & Valenciennes.
136. Apogon crassiceps Garman.
137. Apogon frenatus Valenciennes.
138. Apogon fasciatus aroubiensis Hombron & Jacquinot.
139. Apogon fasciatus stevensi McCulloch.
140. Apogon savayensis Günther.
141. Apogon nubilis Garman.
142. Apogon monochrous Bleeker.
143. Apogon sangiensis Bleeker.
144. Foa vaiulae Jordon & Seale.

Family xxxix. AMBASSIDAE.

145. Ambassis urotaenia Bleeker.

Family xl. MORONIDAE.

146. Percalates colonorum Günther (introduced from Australia).

Family xli. EPINEPHELIDAE.

147. Plectropomus maculatus Bloch.
148. Epinephelus merra Bloch.
149. Epinephelus pantherinus Lacepède.
150. Epinephelus maculatus Bloch.
151. Epinephelus ura Cuvier & Valenciennes.
152. Epinephelus hoevenii Bleeker.
153. Epinephelus summana Forskal.
154. Promicrops lanceolatus Bloch.

Family xlii. GRAMMISTIDAE.

155. Grammistes orientalis Bloch.

Family xliii. PLESIOPIDAE.

156. Pharopteryx melas Bleeker.
157. Pharopteryx nigricans Rüppell.

Family xliv. PSEUDOCHROMIDAE.

158. Pseudogramma polyacanthus Bleeker.

Family xlv. LUTIANIDAE.

159. Lutianus aureovittatus Macleay.
160. Lutianus gibbus Forskal.
161. Lutianus kasmira Forskal.
162. Lutianus johni Bloch.
163. Lutianus marginatus Cuvier & Valenciennes.
164. Lutianus semicinctus Quoy & Gaimard.
165. Lutianus rufolineatus Cuvier & Valenciennes.
166. Lutianus fulviflamma Forskal.
167. Lutianus macolor Cuvier & Valenciennes.
168. Lutianus carponotatus Richardson.
169. Lutianus vitianus Hombron & Jacquinot.
170. Aprion virescens Cuvier & Valenciennes.
171. Nemipterus (synagris) latifrons Kner.

Family xlvi. CAESIONIDAE.

172. Caesio erythrogaster Kuhl & van Hasselt.

Family xlvii. POMADASIDAE.

173. Plectorhynchus pica Cuvier & Valenciennes.
174. Plectorhynchus chaetodontoides Lacepède.
175. Plectorhynchus pictus Thunberg.
176. Euelatichthys obscurus Günther.
177. Scolopsis trilineata Kner.
178. Scolopsis bilineata Bloch.
179. Scolopsis temporalis Cuvier & Valenciennes.

Family xlviii. THERAPONIDAE.

180. Therapon jarbua Forskal.
181. Therapon maculatus Kendall & Goldsborough.
182. Therapon oxyrhynchus Temminck & Schlegel.
183. Therapon servus Bloch.
184. Therapon argenteus Cuvier & Valenciennes.
185. Therapon unicolor Günther.
186. Pelates quadrilineatus Bloch.

Family xlix. LETHRINIDAE.

187. Lethrinus haematopterus Temminck & Schlegel.
188. Lethrinus moensi Bleeker.
189. Lethrinus ramak Forskal.
190. Lethrinus harak Forskal.
191. Lethrinus nebulosus Forskal.
192. Lethrinus mahsena Forskal.
193. Lethrinus mahsenoides Bleeker.

Family l. SPARIDAE.

194. Monotaxis grandoculis Forskal.
195. Monotaxis heterodon Günther.

Family li. MULLIDAE.

196. Upeneus vittatus Forskal.
197. Upeneus griseofrenatus Kner.
198. Upeneus sulphureus Cuvier & Valenciennes.
199. Upeneus malabaricus Cuvier & Valenciennes.
200. Pseudupeneus taeniatus Kner.

201. Pseudupeneus indicus Shaw.
202. Mulloides vanicolensis Cuvier & Valenciennes.

Family lii. CIRRHITIDAE.

203. Cirrhitichthys oxycephalus Bleeker.

Family liii. PLATACIDAE.

204. Platax orbicularis Forskal.

Family liv. MONODACTYLIDAE.

205. Monodactylus argenetus Linnaeus.

Family lv. CARACANTHIDAE.

206. Amphiprionichthys unipinna Gray.
207. Amphiprionichthys apistus Bleeker.
208. Amphiprionichthys villosus Kner.

Family lvi. SCORPAENIDAE.

209. Scorpaenodes polylepis Günther.
210. Scorpaenodes guamensis Quoy & Gaimard.
211. Scorpaena diabolus Cuvier & Valenciennes.
212. Scorpaena zanzibarensis Playfair.
213. Setarches fidjiensis Günther.
214. Sebastapistes galactacma Jenkins.
215. Sebastapistes tristis Klunzinger.
216. Taenianotus triacanthus Lacepède.
217. Pterois (Brachirus) zebra Cuvier & Valenciennes.
218. Pterois (Brachirus) sausaulele Jordan & Seale.
219. Pterois brachypterus Cuvier & Valenciennes.
220. Synanceja verrucosa Bloch & Schneider.
221. Amblyapistus taenianotus Cuvier & Valenciennes.

Family lvii. URANOSCOPIDAE.

222. Uranoscopus fuscomaculatus Kner.

Family lviii. CHAETODONTIDAE.

223. Chaetodon baronessa Cuvier & Valenciennes.
224. Chaetodon reticulatus Cuvier & Valenciennes.
225. Chaetodon vagabundus Linnaeus.
226. Chaetodon rafflesi Bennett.
227. Chaetodon melanotus Bloch & Schneider.
228. Chaetodon citrinellus Broussonet.
229. Chaetodon setifer Bloch.
230. Chaetodon ephippium Cuvier & Valenciennes.
231. Chaetodon trifasciatus Park.
232. Megaprotodon plebeius Gmelin.
233. Heniochus varius Cuvier & Valenciennes.
234. Heniochus chrysostomus Cuvier & Valenciennes.
235. Heniochus macrolepidotus Linnaeus.
236. Holacanthus flavissimus Cuvier & Valenciennes.
237. Holacanthus nicobariensis Bloch & Schneider.
238. Holacanthus marianus Seale.
239. Holacanthus cyanonotis Günther.
240. Holacanthus semicirculatus Cuvier & Valenciennes.
241. Holacanthus imperator Bloch.
242. Parachaetodon ocellatus Cuvier & Valenciennes.

Family lix. ZANCLIDAE.

243. Zanclus cornutus Linnaeus.

Family lx. TOXOTIDAE.

244. Toxotes jaculator Pallas.

Family lxi. ACANTHURIDAE.

245. Teuthis nigricans Linnaeus.
246. Teuthis olivaceus Bloch & Schneider.
247. Teuthis elongatus Lacepéde.
248. Teuthis blochii Cuvier & Valenciennes.
249. Teuthis gahm Forskal.
250. Teuthis matoides Cuvier & Valenciennes.
251. Teuthis triostegus Linnaeus.
252. Teuthis guttatus Bloch & Schneider.
253. Teuthis glaucopareius Cuvier & Valenciennes.
254. Acanthurus annulatus Quoy & Gaimard.
255. Acanthurus marginatus Cuvier & Valenciennes.
256. Zebrasoma rhombeum Kittlitz.
257. Zebrasoma veliferum Bloch.

Family lxii. SIGANIDAE.

258. Siganus marmoratus Quoy & Gaimard.
259. Siganus rostratus Cuvier & Valenciennes.
260. Siganus doliatus Cuvier.
261. Siganus concatenatus Cuvier & Valenciennes.
262. Siganus vermiculatus Cuvier & Valenciennes.
263. Siganus vitianus Sauvage.
264. Siganus oligostictus Kner.
265. Siganus punctatus Bloch & Schneider.
266. Siganus striolatus Günther.

Family lxiii. POMACENTRIDAE.

267. Pomacentrus tripunctatus Cuvier & Valenciennes.
268. Pomacentrus scolopsis Quoy & Gaimard.
269. Pomacentrus nigricans Lacepède.
270. Pomacentrus vitianus Sauvage.
271. Pomacentrus lividus Forster.
272. Pomacentrus albifasciatus Schlegel & Müller.
273. Glyphisodon cyaneus Quoy & Gaimard.
274. Glyphisodon zonatus Cuvier & Valenciennes.
275. Glyphisodon xanthozona Bleeker.
276. Glyphisodon hemimelas Kner.
277. Glyphisodon assimilis Günther.
278. Glyphisodon amabilis De Vis.
279. Glyphisodon coelestinus Cuvier & Valenciennes.
280. Glyphisodon uniocellatus Quoy & Gaimard.
281. Glyphisodon filholi Sauvage.
282. Glyphisodon corneyi Jordan & Dickerson.
283. Glyphisodon leucozona Bleeker.
284. Glyphisodon cingulatus Kner.
285. Glyphisodon albofasciatus Hombron & Jacquinot.
286. Chromis (Hoplochromis) caeruleus Cuvier & Valenciennes.
287. Dascyllus aruanus Linnaeus.
288. Dascyllus reticulatus Richardson.
289. Dascyllus unifasciatus Kner.
290. Dascyllus trimaculatus Rüppell.
291. Amphiprion percula Lacepède.
292. Amphiprion chrysopterus Cuvier & Valenciennes.
293. Amphiprion tricolor Günther.
294. Amphiprion polymnus Bloch.
295. Amphiprion bicinctus Rüppell.

Family lxiv. CORIDAE.

296. Anampses geographicus Cuvier & Valenciennes.
297. Anampses fidjiensis Sauvage.
298. Anampses pterophthalmus Bleeker.
299. Hinalea axillaris Quoy & Gaimard.
300. Labroides dimidiatus Cuvier & Valenciennes.
301. Stethojulis strigiventer Bennett.
302. Stethojulis albovittata Bonnaterre.
303. Stethojulis filholi Sauvage.
304. Stethojulis renardi Bleeker.
305. Stethojulis phekadopleura Bleeker.
306. Stethojulis interrupta Günther.
307. Stethojulis kalosoma Bleeker.
308. Leptojulis pardalis Kner.
309. Gomphosus varius Lacepède.
310. Halichoeres trimaculatus Quoy & Gaimard
311. Halichoeres timorensis Bleeker.
312. Halichoeres opercularis Günther.
313. Halichoeres binotopsis Bleeker.
314. Halichoeres daedalma Jordan & Seale.
315. Halichoeres pseudominiatus Bleeker.
316. Halichoeres guttatus Bloch.
317. Halichoeres poecilus Richardson.
318. Halichoeres hortulanus Lacepède.
319. Halichoeres miniatus Cuvier & Valenciennes.
320. Macropharyngodon geoffroyi Quoy & Gaimard.
321. Thalassoma janseni Bleeker.
322. Thalassoma aneitense Günther.
323. Thalassoma dorsale Quoy & Gaimard.
324. Chelio inermis Forskal.
325. Coris annulata Lacepède.
326. Coris pulcherrima Günther.
327. Cheilinus trilobatus Lacepède.
328. Cheilinus radiatus Bloch.
329. Cheilinus pulchellus Sauvage.
330. Cheilinus diagrammus Lacepède.
331. Cheilinus undulatus Rüppell.
332. Cheilinus chlorurus Bloch.
333. Pseudocheilinus hexataenia Bleeker.
334. Epibulus insidiator Pallas.
335. Novaculichthys taeniurus Lacepède.
336. Novacula javanica Bleeker.

Family lxv. SPARISOMIDAE.

337. Scarichthys auritus Kuhl & van Hasselt.

Family lxvi. SCARIDAE.

338. Scarus filholi Sauvage.
339. Scarus galena E. K. Jordan.
340. Scarus spilonotus Kner.
341. Scarus spinus Kner.
342. Scarus nuchipunctatus Cuvier & Valenciennes.
343. Scarus microrhinos Bleeker.
344. Scarus upolensis Jordan & Seale.
345. Scarus brunneus Jenkins.
346. Scarus spinidens Quoy & Gaimard.
347. Scarus gymnognathus Bleeker.
348. Scarus brachysoma Bleeker.

Family lxvii. ECHENEIDAE.

349. Remora remora Linnaeus.

Family lxviii. ELEOTRIDAE.

350. Bostrychus sinensis Lacepède.
351. Valenciennea muralis Quoy & Gaimard.
352. Valenciennea longipinnis Lay & Bennett.
353. Valenciennea strigata Broussonet.
354. Eleotris fusca Bloch & Schneider.
355. Ophiocara aporos Bleeker.
356. Ophiocara hoedtii Bleeker.
357. Ophiocara cantoris Günther.
358. Ophiocara ophiocephalus Kuhl & van Hasselt.
359. Ophiocara macrolepidotus Bloch.
360. Ophiocara porocephalus Bleeker.
361. Hypseleotris cyprinoides Cuvier & Valenciennes var. guntheri Bleeker.
362. Hypseleotris macrolepidotus Bloch.
363. Asterropterix semipunctatus Rüppell.
364. Oxyeleotris marmorata Bleeker.

Family lxix. GOBIIDAE.

365. Periophthalmodon barbarus Linnaeus.
366. Periophthalmus koelreuteri Pallas.
367. Periophthalmus koelreuteri Pallas var. argentilineatus Cuvier & Valenciennes.
368. Mugilogobius notospila Günther.
369. Aboma graeffei Günther.
370. Gobius ornatus Rüppell.
371. Stigmatogobius sadanundio Buchanan-Hamilton.
372. Bathygobius fuscus Rüppell.
373. Bathygobius petrophilus Bleeker.
374. Chonophorus ocellaris Broussonet.
375. Chonophorus genivittatus Cuvier & Valenciennes.
376. Amblygobius phalaena Cuvier & Valenciennes.
377. Amblygobius semicinctus Kner.
378. Oxyurichthys ophthalmonemus Bleeker.
379. Gobionellus atriclypeus Garman.
380. Gobiodon atrangulatus Garman.
381. Gobiodon quinquestrigatus Cuvier & Valenciennes var. ceramensis Bleeker.
382. Sicydium lagocephalum Kner.
383. Sicydium laticeps Cuvier & Valenciennes.
384. Sicyopterus taeniurus Günther.
385. Amblyopus totoyensis Garman.
386. Paragobiodon echinocephalus Rüppell.

Family lxx. PARAPERCIDAE.

387. Parapercis tetracanthus Lacepède.
388. Parapercis hexophthalmus Ehrenberg.
389. Parapercis cylindricus Bloch.

Family lxxi. CALLIONYMIDAE.

390. Callionymus calauropomus Richardson.

Family lxxii. BLENNIIDAE.

391. Blennius canescens Garman.
392. Cirripectes sebae Cuvier & Valenciennes.
393. Salarias meleagris Cuvier & Valenciennes.
394. Salarias oorti Bleeker.
395. Salarias alboguttatus Kner.
396. Salarias edentulus Bloch & Schneider.
397. Salarias lineatus Bleeker.
398. Salarias sumatranus Bleeker.
399. Salarias sertatus Garman.
400. Salarias hasselti Bleeker.
401. Salarias fasciatus Bloch.
402. Aspidontus taeniatus Quoy & Gaimard.
403. Petroscirtes elongatus Peters.
404. Petroscirtes lineolatus Kner.
405. Petroscirtes semilineatus Kner.
406. Petroscirtes obliquus Garman.

407. Petroscirtes oualensis Günther.
408. Petroscirtes atrodorsalis Günther.

Family lxxiii. GOBIESOCIDAE.

409. Trachelochismus pinnulatus Forster.

Family lxxiv. FIERASFERIDAE.

410. Fierasfer homei Richardson.
411. Jordanicus gracilis Bleeker.

Family lxxv. BALISTIDAE.

412. Balistes bursa Bloch & Schneider.
413. Balistes fuscus Bloch & Schneider.
414. Balistes conspicillum Bloch & Schneider.
415. Balistapus aculeatus Linnaeus.
416. Balistapus cinctus Lacepède.
417. Balistapus undulatus Bloch & Schneider.
418. Abalistes stellaris Bloch & Schneider.

Family lxxvi. MONACANTHIDAE.

419. Oxymonacanthus longirostris Bloch & Schneider.
420. Osbeckia (?) armata Garman.
421. Osbeckia scripta Osbeck.
422. Monacanthus ruppelli Castelnau.

Family lxxvii. TETRAODONTIDAE.

423. Spheroides hypselogenion Bleeker.
424. Tetraodon nigropunctatus Bloch & Schneider.
425. Tetraodon hispidus Linnaeus.
426. Tetraodon stellatus Bloch & Schneider.
427. Tetraodon immaculatus Bloch & Schneider.
428. Tetraodon immaculatus Bloch & Schneider var. manillensis Procé.

Family lxxviii. CANTHIGASTERIDAE.

429. Canthigaster bennettii Bleeker.
430. Canthigaster papua Bleeker.
431. Canthigaster papua Bleeker var. striolatus Bleeker.

Family lxxix. DIODONTIDAE.

432. Diodon hystrix Linnaeus.

Family lxxx. OSTRACIIDAE.

433. Ostracion nasus Bloch.
434. Ostracion tuberculatus Linnaeus.
435. Lactoria cornuta Linnaeus.

Family lxxxi. ANTENNARIIDAE.

436. Histrio histrio Linnaeus.
437. Antennarius hispidus Bloch & Schneider.
438. Antennarius coccineus Lesson & Garnot.

Family lxxxii. CHAUNACIDAE.

439. Chaunax pictus Lowe.

APPENDIX ONE

The fishes of Rotuma, a small island about 260 miles north by west of Fiji, have been listed by Boulenger [Ann. Mag. Nat. Hist. (6) xx, 1897, pp. 371-374]. To that list may now be added: *Gymnothorax zonipectus* Seale, *Uropterygius concolor* Rüppell, *Doryrhamphus melanopleura* Bleeker, *Doryichthys pleurotaenia* Günther, and *Gomphosus pectoralis* Quoy & Gaimard.

APPENDIX TWO

Having recently examined several interesting species of fishes from the southern Pacific which do not appear to have been recorded from the localities at which they were obtained, I bring the following records before the notice of those interested in Pan-Pacific fishes.

Chaetodon flavirostris Günther, *Cristiceps argyropleura* Kner, *Tetraodon lacrymatus* Cuvier, and *Coris cingulum* Lacepède from Lord Howe Island; *Pterois volitans* Linnaeus from Tanna Island, New Hebrides; *Epinephelus pachycentrum* Cuvier & Valenciennes from the Sir Edward Pellew Group, Gulf of Carpentaria and Port Darwin, Northern Territory of Australia; *Acanthidium quadrispinosum* McCulloch from off Bateman's Bay, New South Wales, and *Uropterygius marmoratus* Lacepède from off Montague Island, New South Wales.

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July 1st., 1926

A Check List of the Fishes of New Zealand

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(Published by request of the Pan-Pacific Research Institution.)

INTRODUCTION

In 1893, Gill (Mem. Nat. Acad. Sciences, 6, pp. 91-124) published the most exhaustive complete treatise on New Zealand fishes which has yet appeared. Previous catalogues of New Zealand fishes are enumerated by him. These are: Forster, 1801; Richardson, 1842-43; Bleeker, 1855; Hutton, 1872; Sherrin, 1886; Hutton, 1889.

Since the publication of the above work by Gill the most important complete work on New Zealand fishes has been "A Basic List of the Fishes of New Zealand" by Edgar R. Waite, (Rec. Canterb. Mus. vol. 1, No. 1, 39 pp. 1907). This admittedly pioneer work contained imperfections; but its publication has been of great benefit to ichthyology in New Zealand and Australia, and to it I am indebted for much of the information on which this list is founded.

In deciding the nomenclature of our fishes I am largely indebted to recent works of the late A. R. McCulloch of the Australian Museum. In particular I have studied McCulloch's List of N. S. W. Fishes, 1921, and a further work by Waite entitled "Catalogue of the Fishes of South Australia." (Rec. South Australia Mus., vol. 2, No. 1, 1921). I have also consulted recent works on "The Genera of Fishes" by Dr. David Starr Jordan.

In 1900, Steindachner (Denk. Ak. Wiss. Wien. LXXX) recorded some ten species from New Zealand. Unfortunately I have not had access to Steindachner's work and am uncertain in regard to the validity of his species which were purposely omitted by Waite in his basic list. I have placed Steindachner's name after species which he described, including them tentatively in the list of species known from New Zealand.

Abbreviations have been used as follows:

Ed. is an edible fish—that is a fish which I have actually found utilized as food in New Zealand. Some 93 indigenous fishes are actually eaten by the New Zealand public; but nearly half of these are only occasional visitors or seen only in small numbers over long intervals. Lists of and notes on edible fishes of New Zealand have been published by me in N. Z. Journal of Science and Technology, vol. 1, pp. 268-271, 1918; ibid. vol. 4, pp. 114-25, 1921, ibid. vol. 5, pp. 91-97, 1922.

Pel. is a pelagic or ocean-going species which normally lives some little distance from land. These are free-swimming species not generally confined in their distribution. In recent years several of these pelagic sporting species have attracted the attention of angling tourists and residents. Visitors from all parts of the world journey to favored localities in the northern parts of New Zealand where the mako shark, Isurus glaucus, and two species of Xiphiiphormes (Sword Fishes) attain a development unknown in the Northern Hemisphere.

Bath. (bathybial) indicates a bottom fish or one found in deep water, generally over 60 fathoms. Many of these

* I have to thank Dr. David Starr Jordan and Mr. Gilbert P. Whitley for valuable assistance in connection with nomenclature.

fishes are covered with thick layers of minute silvery crystalline prisms and have delicate scarlet fins while others have luminous spots situated generally on the ventral surface.

Mid. (mid-way) is a fish living in mid-water. Many of these species are migratory and erratic in their occurrence. Most have color silver varying to blue and green. Small numbers of these fishes may at intervals be taken in the trawl.

Reef refers to a fish which is essentially a rock-dweller. There are no coral reefs around New Zealand. The proportion of known reef-dwelling species seem to prefer sandy bottoms in the neighborhood of rocky formations.

S. denotes a species which is found close in shore as well as in rock-pools on the coast line.

R. indicates a species which is not often taken and is generally considered rare. Many of these fish may be quite common were more known about them; but further research is needed. Nearly half the total species in the check-list are so indicated.

T. is a fish recorded in trawler catches either by Waite or myself. Something over one-quarter of our total fish fauna find their way into trawler catches; and it is probable that considerably more escape by burrowing in the sand or passing through the meshes of the net.

F. refers to a fish taken in fresh water only. There are very few fishes in New Zealand which live only in fresh waters, but some nine fresh-water species have never been recorded in brackish water. Were the full life histories of our fresh water fishes better known it is probable that several of these species would be found to occur in both fresh and brackish water.

Fe. denotes those fresh-water species which make seasonal migration to brackish or salt water to spawn. These are the most prolific of our fresh water fishes, and include one species of great commercial importance, Galaxias attenuatus, the young of which constitute the New Zealand white-bait.

Most of the abbreviated terms used will be liable to change as we learn more of our fishes.

INDIGENOUS FISHES

Family Branchiostomidae.

Heteropleuron hectori Benham. Lancelet. R.

Family Eptatretidae.

Eptatretus cirrhatus (Bloch and Sch.). Hag. S. Ed. T.

Family Petromyzonidae.

Geotria australis Gray. Southern Lamprey. Fe. Ed.

Geotria saccifera Regan. Northern Lamprey. Fe. Ed.

Family Hexanchidae.

Notorhynchus pectorosus (Garman). Seven—gilled shark. Pel.

Family Carcharhinidae.

Galeorhinus australis (Macleay). Southern Tope. T.S.

Carcharinus brachyurus (Günther). Sharp-finned Whaler. Pel. R.

Carcharinus macrurus Rams. and Ogilb. Northern Whaler. Pel.

Prionace glauca (Linnaeus). Blue Shark. Pel.

Family Sphyrnidae.

Sphyrna zygaena (Linnaeus). Hammer-head Shark. Pel.

Family Mustelidae.

Mustelus antarcticus Günther. Smooth Hound. Ed. Est. T.

Family Scyliorhinidae.

Cephaloscyllium sabella (Broussonet). Carpet Shark. T.

Scyllium chilense, p. 519, Steindachner.

Family Alopiidae.

Alopias vulpinus (Bonnaterre). Thresher Shark. Pel. R.

Family Cetorhinidae.

Cetorhinus maximus (Gunner). Basking Shark. Pel. R.

Family Isuridae.

Lamna nasus (Bonnaterre). Porbeagle Shark. Pel. R.

Isurus glaucus (Müller and Henle). Mako Shark. Pel.

Carcharodon carcharias (Linnaeus). White Pointer. Pel. R.

Family Squalidae.

Echinorhinus brucus Bonnaterre. Spinous Shark. Pel. B.

Oxynotus bruniensis (Ogilby). Spiny Dog-fish. Pel. R.
Squalus fernandinus Molina. Spined Dog-fish. Ed. T.
Squalus megalops (Macleay). Piked Dog-fish. Mid.

Family Scymnorhinidae.

Scymnorhinus licha (Bonnaterre). Pel.
Euprotomicrus bispinatus (Quoy and Gaim.). R.

Family Spinacidae.

Centrophorus plunketi Waite. R.
Scymnodon sherwoodi Archey. R.

Family Narcobatidae.

Narcobatus fairchildi (Hutton). Electric Ray. Est. Ed. T.
Typhlonarke aysoni (Hamilton). Torpedo Ray. T.

Family Rajidae.

Raja nasuta Müller and Henle. Skate. Ed. T.
Arhynchobatis asperrimus Waite. Long-tailed Skate. R. T.

Family Dasyatidae.

Dasyatis brevicaudatus (Hutton). Smooth Stingaree. T.
Aetobatis tenuicaudatus (Hector). Eagle Ray. T.

Family Chimaeridae.

Chimaera novae-zelandiae Fowler. R.

Family Callorhynchidae.

Callorhynchus milii Bory. Elephant Fish. Reef. T.

Family Engraulidae.

Engraulis australis Shaw. Anchovy. Mid. Ed. T.

Family Clupeidae.

Sardinia neopilcharda Steindachner. Pilchard. Mid. Ed. T.
Clupea antipodum (Hector). Sprat. Mid. Ed. T.
Clupea muelleri Klunzinger. R.
Chanos chanos (Forskal). Salmon-Herring. R.

Family Galaxiidae.

Galaxias alepidotus (Bloch and Sch.). F. Ed.
Galaxias fasciatus Gray. Kokopu. F. Ed.
Galaxias brevipinnis Günther. Gudgeon. F. Ed.
Galaxias lynx Hutton. Taiwharu. F. Ed. R.
Galaxias robinsonii. Clarke. F.
Galaxias attenuatus (Jenyns). Minnow. Fe. Ed.
Galaxias huttoni Regan. Koaro. F. Ed.
Galaxias burrowsii Phillipps. Canterbury mud-fish. F.
Neochanna apoda Günther. Mud-fish. F.

Family Gonorhynchidae.

Gonorhynchus gonorynchus (Linnaeus). Sand Fish. Est. T. Reef.

Family Argentinidae.

Argentina elongata Hutton. Silver-side. Mid. T.

Family Retropinnidae.

Retropinna retropinna (Richardson). Smelt. Fe. Ed.

Family Aplochitonidae.

Prototroctes oxyrhynchus Günther. Grayling. Fe. Ed.

Family Stomiatidae.

Photichthys argenteus Hutton. Bath. R.
Maurolicus australis (Hector). Southern Pearl-side. Bath.
Argyropelecus intermedius Clarke. R.
Idiacanthus niger Regan. R.

Family Sudidae.

Chlorophthalmus nigripinnis Günther. Bath. T.

Family Alepisauridae.

Plagyodus ferox Lowe. Pel. R.

Family Myctophidae.

Bathysaurus ferox Günther. R.
Bathysaurus gracilis (Günther). R.
Myctophum humboldti (Risso). Lantern Fish. Bath. T.
Myctophum hectoris (Günther). R.
Myctophum coccoi Cocco. R.
Rhinoscopelus coruscans (Richardson). R.
Myctophum novae seelandiae, p. 513, Steindachner. R.
Lampanyctus longipinnis Regan. R.
Lampanyctus macropterus Brauer. R.
Lampanyctus parvimanus (Günther). R. Bath.

Family Anguillidae.

Anguilla aucklandii Richardson. Tuna. Fe. Ed.
Anguilla australis Richardson. Matamoe. Fe. Ed.

Family Leptocephalidae.

Gnathopis habenata (Richardson). Silver Eel. Ed. T.
Conger (Linnaeus). Conger Eel. Ed. S. T.
Muraena nubila Richardson. R.
Muraena thysoidea, p. 514, Steindachner.
Muraena krullii Hector. Yellow Eel. S. T.

Family Myridae.

Muraenichthys australis Macleay. R.
Muraenichthys breviceps. Günther. R.

Family Ophichthyidae.

Ophisurus novae-zealandiae Hector. Snake Eel. R.

Family Synbranchidae.

Aotea acus Phillipps. R.

Family Notacanthidae.

Notacanthus sexspinnis Richardson. R.

Family Macrorhamphosidae.

Macrorhamphosus scolopax (Linnaeus). Snipe Fish. T.
Macrorhamphosus elevatus (Waite). R.
Centriscops humerosus (Richardson). T.
Centriscops sinuosus Regan. T.
Notopogon xenosoma Regan. R.
Notopogon lilliei Regan. R.

Family Syngnathidae.

Syngnathus pelagicus Linnaeus. R.
Syngnathus blainvillianus (Eydoux and Gerv.) Short-snouted pipe-fish. T.
Syngnathus norae Waite. Long-snouted pipe-fish. T.
Ichthyocampus filum Günther. Common Pipe-fish. S. and B.
Doryrhamphus elevatus (Hutton). R.
Stigmatophora longirostris Hutton. R.
Solegnathus spinosissimus (Günther). Spiny Sea-horse. T.
Hippocampus abdominalis Lesson. Common Sea-horse. S. T.

Family Scomberesocidae.

Scomberesox forsteri Cuv. and Val. Skipper. Ed. T.

Family Hemirhamphidae.

Hemirhamphus intermedius Cantor. Gar-fish. Ed. S.

Family Exocoetidae.

Evolantia microptera (Cuv. and Val.) Flying Fish. Pel.
Exocoetus spilonotopterus Bleeker. R.
Cypselurus speculiger Cuv. and Val. Pel.
Cypselurus ilma Clarke. R.
Cypselurus cribrosus (Kner). R.
Cypselurus melanocercus (Ogilby). Large Flying Fish. R.

Family Macrouridae.

Coelorhynchus australis (Richardson). Javelin Fish. Ed. T.
Coelorhynchus aspercephalus Waite. T.
Macrourus serrulatus (Günther). R.
Chalinura murrayi (Günther). R.
Lepidorhyncus denticulatus (Richardson). R.
Nematonurus armatus (Hector). R.
Macruronus novae-zelandiae (Hector). Hoki. Ed. T.

Family Gadidae.

Merluccius gayi (Guichenot). Whiting. Ed. Reef. T.
Halargyreus johnsonii Günther. R.
Physiculus bachus (Bloch and Schn) Red Cod. Reef Ed. Est. T.
Lotella rhacinus (Forster). Cloudy Bay Cod. Reef Ed.
Lotella grandis, p. 509, Steindachner. R.
Gaidropsarus novae-zealandiae. R.
Auchenoceros punctatus (Hutton). Ahuru. Reef. T.
Mora pacifica Waite. R.

Family Berycidae.

Trachichthodes affinis (Günther). R.

Family Trachichthyidae.

Hoplostethus elongatus (Günther). Long Roughy. R.
Hoplostethus intermedius (Hector). R.
Paratrachichthys trailli (Hutton). Roughy. Ed. Reef. T.

Family Zeidae.

Zeus faber Linnaeus. John Dory. Ed. T.
Zenopsis nebulosus (Schlegel). Mirror Dory. Ed. Bath. T.
Oreosoma atlanticum Cuv. and Val. R.

Family Cyttidae.

Cyttus australis (Richardson). Boar Fish. Ed. Reef.
Cyttus novae-zelandiae (Arthur). Silver Dory. Ed. T.
Rhombocyttus traversi (Hutton). R.
Diretmus argenteus Johnson. R. Bath.
Capromimus abbreviatus (Hector). Bath. T.

Family Regalecidae.

Regalecus pacificus Haast. Oar Fish. Bath.
Regalecus argenteus Parker. Bath.
Regalecus glesne (Ascanius). Bath.
Agrostichthys parkeri (Benham). R. Bath.

Family Trachipteridae.

Trachipterus trachypterus (Gmelin) Ribbon Fish. Bath.
Trachipterus jacksonensis (Ramsay). R. Bath.

Family Cepolidae.

Cepola aotea Waite. Band Fish. T.

Family Pleuronectidae.

Caulopsetta scapha (Forster). Megrim. Ed. T.
Caulopsetta boops (Hector). R.
Caulopsetta hectoris (Günther). R.
Brachypleura novae-zeelandiae Günther. R.
Colistium nudipinnis (Waite.) Turbot. Ed. T.
Colistium guntheri (Hutton.) Brill. Ed. T.
Rhombosolea plebeia (Richardson). Sand Flounder. Ed. S. and Est. T.
Rhombosolea millari Waite. Yellow Flounder. Ed. Est.
Rhombosolea tapirina Günther. Green-back Flounder. Ed.
Rhombosolea retiaria Hutton. Black Flounder. Ed. Fe.
Apsetta thompsoni Kyle. R.
Peltorhamphus novae-zeelandiae Günther. Sole. Ed. S. and T.
Pelotretis flavilatus Waite. Lemon Sole. Ed. T.

Family Bothidae.

Lophonectes mongonuiensis Regan. R.

Family Atherinidae.

Hepsetia pinguis (Lacepède). Hardyhead. R.

Family Mugilidae.

Mugil cephalus Linnaeus. Grey Mullet. Ed. Est.
Agonostomus forsteri Cuv. and Val. (Commonly called "Herring.") Yellow-eyed Mullet. Ed. Est.

Family Sphyraenidae.

Sphyraena obtusata Cuv. and Val. Pike. R.

Family Stromateidae.

Cubiceps gracilis (Lowe). R.
Seriolella punctata (Forster). Silver fish. Ed. Mid.
Seriolella brama (Günther). Warehou. Ed. Reef. T.
Seriolella porosa Guichenot. R.
Centrolophus maoricus Ogilby. R.
Centrolophus britannicus Günther. R.
Centrolophus huttoni Waite. R.
Schedophilus porosus (Richardson). R.
Hyperoglyphe porosa (Richardson). Bream Ed. Mid.
Cubiceps caerulus Regan. R.

Family Tetragonuridae.

Tetragonurus cuvieri Risso. R.

Family Serranidae.

Polyprion americanus (Bloch and Schn.).
Bass Groper. Ed. Bath.
Polyprion oxygeneios (Bloch and Schn.). Groper or Hapuku. Ed. Reef. T.
Hypoplectrodes semicinctus (Cuv. and Val.). Half-banded Sea-perch. R.
Caesioperca lepidoptera (Forster). Red Perch. Ed. B. Reef.
Callanthias splendens Griffin. R.
Caprodon longimanus (Günther). Long-fin. Reef. Ed.

Plagiogeneion rubiginosus (Hutton). R.
Serranops maculicanda Regan. R.
Lepidoperca inornata Regan. R.

Family Gempyllidae.

Thyrsites atun (Euphrasen). Barracouta. Mid. Ed. Est. T.
Jordanidia solandri (Cuv. and Val.) Hake or Southern King-fish. T. Ed.
Epinephelus damelii Gunther. Black Rock Cod. R.

Family Carangidae.

Caranx platessa Cuv. and Val. Trevally. Mid. Est. T.
Caranx speciosus, p. 495. Steindachner.
Decapterus koheru (Hector) Koheru. Mid. Ed. Est.
Trachurus novae-zelandiae (Richardson). Horse Mackerel. Md. Ed. Est. T.
Seriola lalandi (Cuvier and Val.) Kingfish. Mid. Ed.
Naucratus indicus (Cuvier and Val.) Pilot Fish. R. Pel.
Evistius huttonii (Günther). R.

Family Sciaenidae

Arripis trutta Forster. Kahawai. Mid. Ed. Est. T.

Family Erythrichthyidae

Emmelichthys nitidus Richardson. Red Bait Fish. S.R. Ed.

Family Bramidae.

Brama raii (Bloch). Ray's Bream. Reef. R.

Family Pteraclidae.

Pteraclis velifera Pallas. Bat Fish. R.

Family Mullidae.

Upeneus porosus Cuv. and Val. Red Mullet. Mid. and Reef.

Family Sparidae.

Pagrosomus auratus (Forster). Snapper. Ed. T.

Family Kyphosidae.

Kyphosus sydneyanus (Günther). Drummer. Reef.

Family Girellidae.

Girella cyanea Macleay. Blue Fish. Reef. Ed.
Girella tricuspidata (Quoy and Gaim.). Parore. S. Ed. Est.

Family Scorpididae.

Scorpis aequipinnis Richardson. Sweep. Ed. T.
Scorpis violaceus (Hutton). Maomao. Ed. T.
Atypichthys strigatus (Günther). Mado. Bath.

Family Histiopteridae.

Zanclistius elevatus (Rams. and Ogilb.). Short Boar Fish. Ed. T.
Paristiopterus labiosus (Günther). Giant Boar Fish. Reef. Ed.
Pseudopentaceros richardsonii (Smith). R.

Family Aplodactylidae.

Aplodactylus schauinslandii, p. 487. Steindachner.
Aplodactylus meandratus Richardson. Marble Fish. Mid. Ed.

Family Cheilodactylidae.

Dactylopagrus macropterus (Foster). Tarakihi. T. Ed.
Cheilodactylus douglasii Hector. Porae. Reef. Ed.
Cheilodactylus vizonarius Saville-Kent. Magpie Perch. R.
Chironemus marmoratus Günther. Kelp Fish. Ed.
Chironemus spectabilis (Hutton). Red Moki. Nanua. Reef. Ed.
Mendosoma lineatum Guichenot. R.

Family Latridae.

Latridopsis ciliaris (Forster). Moki. Reef. Ed.
Latridopsis ærosa (Hutton). Reef. Ed. R.
Latris lineata (Forster). Trumpeter. Reef. Ed. T.

Family Pomacentridae.

Chromis dispilus Griffin. R.

Family Scaridae.

Odax vittatus Richardson. Common Kelp-fish. Mid. Ed.
Coridodax pullus (Forster). Butter-fish. Mid. Ed.

Family Labridae.

Pseudolabrus fucicola (Richardson). R.
Pseudolabrus coccineus (Forster). Scarlet Parrot-fish. Reef. Ed.
Pseudolabrus celidotus (Forster). Spotty. S. Reef. Ed. T.
Pseudolabrus cinctus (Hutton). Girdled Parrot-fish. Ed.
Pseudolabrus pittensis Waite. Banded Parrot-fish. Reef. Ed.
Pseudolabrus cossyphoides, p. 503. Steindachner. R.
Pictilabrus laticlavius (Richardson). R.
Coris sandeyeri (Hector). R.
Verreo oxycephalus (Bleeker). Red Pig-fish. Reef. Ed.
Verreo bellis (Rams. and Ogilb.). Reef. Ed.
Duymaeria flagellifer (Cuv. and Val.). R.

Family Leptoscopidae.

Leptoscopus macropygus (Richardson). Stargazer. T. R. Ed.
Crapatalus novae-zelandiae Günther. T.

Family Cheimarrichthyidae.

Cheimarrichthys fosteri Haast. Papanoko. Fe. Ed.

Family Parapercidae.

Parapercis colias (Forster). Blue Cod. Reef. Ed. T.
Parapercis gilliesii (Hutton). T.
Percis nictymera, p. 497, Steindachner. R.

Family Uranoscopidae.

Kathetostoma giganteum Haast. Flat Head. T. Ed.
Kathetostoma fluviatile Hutton. R.
Geniagnus monopterygius (Bloch and Schn.). Cat Fish T.
Gnathagnus innotabilis Waite. T.

Family Nototheniidae.

Notothenia macrocephala Günther. Maori Chief. Reef. Ed.
Notothenia cornucola Richardson. Reef. R.
Notothenia microlepidota Hutton. Black Cd. Reef.
Notothenia filholi Sauvage. R.
Notothenia colbecki Boulenger. R.
Bovichtus variegatus (Richardson). R.

Family Scombridae.

Euthynnus pelamis (Linnaeus). Bonito. Pel. Ed.

Pneumatophorus australasicies (Cuv. and Val.) English Mackerel. Mid. Ed. T.
Sarda chiliensis (Cuv. and Val.). Tunny. Ed. Pel.

Family Scombridae.

Scomberomorous guttatcs (Bloch and Schn.) Spotted Spanish Mackerel. R.
Gasterochisma melampus Richardson. Butterfly Fish. R. Pel.
Germo germon (Lacepède). Long-finned Albacore. Mid. R. Ed.

Family Luvaridae.

Luvarus imperialis Rafinesque. Luvaru. R. Pel.

Family Lampridae.

Lampris regius (Bonnaterre). Opah. R. Pel.

Family Xiphiidae.

Xiphias gladius Linnaeus. Broad-beak Sword Fish. Pel.

Family Istiophoridae.

Istiophorus gladius (Bonnaterre). Sword Fish or Marlin. Pel.

Family Trichiuridae.

Lepidopus caudatus (Euphrasen). Frost Fish. Bath. and T. Ed.
Lepidopus (Benthodesmus) elongatus (Clarke). Bath. R.

Family Gempyliae.

Semnisoma serpens Cuv. and Val. Scabbard Fish. Bath. R.

Family Trichonotidae.

Hemerocoetes acanthorhynchus (Forster). T.
Hemerocoetes waitei Regan. R. T.
Hemerocoetes pauciradiatus Regan. R.
Hemerocoetes macrophthalmus Regan. R.
Limnichthys fasciatus Waite: R.

Family Gobiidae.

Gobiomorphus gobioides (Cuv. and Val.). Bully. Fe. Ed.
Gobius lentiginosus Richardson. S.
Eleotris radiata Quoy. and Gaim. Kurahina. S. R.
Eleotris huttoni Ogilby. R.

Family Acanthoclinidae.

Acanthoclinus quadridactylus (Bl. and Schn.). S. Est.

Family Blenniidae.

Ericentrus rubrus (Hutton). S.
Cologrammus flavescens (Hutton). R.
Cristiceps australis Cuv. and Val. Weed-fish. S.
Tripterygion tripenne (Forster). S.
Tripterygion varium (Forster). Common Salt-water bully. Est. T.
Tripterygion segmentatum McCulloch and Phillipps. Banded Bully. S.
Helcogramma medium (Günther). R.
Notoclinus fenestratus (Forster). R.
Auchenopterus aysoni Hector. R.

Family Brotulidae.

Pyramodon punctatus (Regan). R.

Family Ophidiidae.

Hypolycodes haastii Hector. R.
Dinematichthys consobrinus Hutton. R.
Genypterus blacodes (Bloch and Schn.). Ling. Bath. Reef. Ed. T.
Genypterus microstomus Regan. R.

Family Zoarcidae.

Melanostigma flaccidum Waite. R.

Family Lophotidae.

Lophotes cepedianus Giorna. Unicorn Fish. R.

Family Echeneididae.

Remorina brachyptera (Lowe). Short Sucking-fish. Mid. (attached).

Family Scorpaenidae.

Helicolenus percoides Richardson. Sea-perch. Reef. Ed. T.
Scorpaena cruenta Richardson. Red Rock-Cod. Reef. Ed.
Scorpaena bynoensis Richardson. Mid. and Reef.

Family Congiopidae.

Congiopodus leucopaecilus (Richardson). Southern Pig Fish Mid. and Reef. T.
Congiopodus peruvianus (Cuv. and Val.). R.

Family Cottidae.

Neophrynichthys latus Hutton. Toad Fish. T.

Family Triglidae.

Chelidonichthys kumu (Lesson and Garnot). Red Gurnard. T. and Reef. Ed.
Lepidotrigla vanessa (Richardson). Butterfly Gurnard. T. Ed.
Lepidotrigla brachyoptera Hutton. Gurnard. T. Ed.
Pterygotrigla picta (Günther). Spotted Gurnard. B. Ed.
Trigla kumoides, p. 498, Steindachner. R.

Family Gobiesocidae.

Diplocrepis puniceus (Richardson). Sucker. S.
Trachelochismus pinnulatus (Forster). Lump Fish. S.
Trachelochismus littoreus (Forster). Cling Fish. S.
Aspasmogaster hectoris (Günther). R.
Aspasmogaster simus (Hutton). R.

Family Ceratiidae.

Aegeonichthys appelii Clarke. R.

Family Antennariidae.

Saccarius lineatus Günther. R.

Family Aceratiidae.

Haplophryne mollis Brauer. R.

Family Monacanthidae.

Cantherines scaber (Bloch and Schn.). S. Ed. T.
Cantherines convexirostris (Günther). Leather Jacket. R. T.
Monacanthus rudis, p. 517, Steindachner.

Family Ostraciidae.

Ostracion fornasini Bianconi. Trunk fish. R.

Family Tetraodontidae.

Sphoeroides richei Freminville. Globe Fish. T. and Reef.
Sphoeroides gillbanksii (Clarke). R.
Sphoeroides cheesemanii (Clarke). R.
Sphoeroides nitidus Griffin. R.

Family Diodontidae.

Allomycterus jaculiferus (Cuvier). Porcupine Fish. T.

Family Molidae.

Mola mola Linnaeus. Sun-fish. Pel.

INTRODUCED FISHES

Family Salmonidae.

Salmo salar Linn. Atlantic Salmon. Now established in Lake Te Anau.

Salmo trutta Linn. Brown Trout. Common, except in North of New Zealand.

Salmo gairdneri Richardson. Rainbow Trout. Established throughout New Zealand.

Salmo sebago Girard. Canadian land-locked Salmon. Introduced into Otago.

Salvelinus fontinalis (Mitchill) American Brook Trout. Small numbers only in scattered localities.

Cristivomer namaycush (Walbaum) Mackinaw Trout. Apparently thriving in certain Canterbury lakes.

Coregonus clupeiformis (Mitchill) White fish. Apparently established in certain South Island lakes.

Oncorhynchus tschawytscha (Walbaum) Quinnat Salmon. Established in South Island.

Oncorhynchus nerka (Walbaum) Sockeye Salmon. Reported established. I have seen no specimens.

Family Cyprinidae.

Cyprinus carpo Linn. Carp. Common in Thermal Lakes and in ponds throughout New Zealand.

Carassius auratus Linn. Gold Fish. Common in same localities as above.

Tinca vulgaris Cuvier. Tench. South Island in ponds.

Family Siluridae.

Ameiurus catus (Linn.) American cat-fish. Common in certain South Island lakes and streams.

Family Percidae.

Perca fluviatilis Linn. Perch. South Island in ponds.

Family Pleuronectidae.

Bothus maximus Will. Turbot. Liberated in sea off Dunedin.

Many other fresh water fishes have been introduced into New Zealand. I have included only those known or reputed to be established. For a full list of species introduced see "The Naturalization of Animals and Plants in New Zealand," by Hon. G. M. Thomson, 1922. Camb. Univ. Press, pp. 185-257.

Dr. David Starr Jordan, Chairman of the Aquatic Resources Council, writes to the Editors of the Journal of the Pan-Pacific Research Institution, giving a list of the fishes he believes will be available during the year for publication in the Journal of the Pan-Pacific Research Institution. The following is the list so far as it has been made up by Dr. Jordan:

MARINE

Coast

Vancouver to San Diego—Hubbs.

Vancouver to Bering Sea—(Evermann or Hubbs).

Gulf of California to Ecuador and Galapagos—Evermann.

West Coast of South America—Eigenmann (or Myers).

Riukiu, Formosa, Hokkaido and Ochotsk Sea—Dr. Shigeho Tanaka.

Alaska and Bering Sea—Evermann or Hubbs.

West Coast Panama to Bering Sea—Jordan and Evermann.

China—N. Gist Gee, Arthur Jacot and Cora B. Reeves.

South Australia—Edward R. Waite, South Australian Museum, Adelaide.

North Australia, Queensland, New South Wales and Victoria—Gilbert P. Whitley, Australian Museum, Sydney.

Tasmania—Clive Lord, Hobart, Tasmania.

New Guinea — Dr. L. F. deBeaufort, Univ. of Amsterdam.

Kamchatka—Dr. L. S. Berg, Leningrad. (National Museum of Russia) USSS.

South Seas—Jordan.

Coast of Canada—Hubbs.

Ecology of Fishes (Part 1)—T. C. Roughley.

Samoa—Jordan.

Korea—Y. Wakiya (Fusan, Korea).

River Fishes of China, Gee and Henry W. Fowler, Acad. Science, Philadelphia.

River Fishes of Japan—Hubbs.

River Fishes of Mexico and Central America;West Coast—G. S. Myers.

It is the purpose of the Pan-Pacific Research Institution to publish a series of local catalogues of the fishes known from waters of the Pacific Ocean, these ultimately to be brought together in a general check list. It will not be possible to issue, at present, either descriptions or synonymy in detail, no accounts of new genera or new species, and no figures will be published, for the present at least. Provision has been made for separate lists in the various regions. These notes of local distribution may be inserted within the line. The validity of many species is still in doubt. It is better to insert these, until their place in Synonymy is actually known.

Three of these local lists are now in type.

1. Fishes of Hawaii by David Starr Jordan and Barton Warren Evermann.

2. Fishes of Ne wZealand by W. J. Phillipps.

3. Fishes of Fiji by Gilbert P. Whitley.

Several other local lists have been already arranged for. The following may be taken as an example of the method suggested.

Family SCORPAENIDAE
MERINTHE Snyder
Merinthe macrocephala (Sauvage)
Oopu Keiu Nohu

Abbreviations may be made, as follows:

x commercial importance
f excellence in food
r very rare
c common or abundant

Do not abbreviate personal names, unless well known, as C & V.

Special localities may be inserted.

Lists may be sent to Pan-Pacific Union, Honolulu, or to David Starr Jordan, Stanford University, California.

Atherton Lee, Chairman Editorial Committee.

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Contributors should read carefully page 2,—"Objects of the Pan-Pacific Research Institution," noting especially the last paragraph.